

Saharo-Arabian racers of the *Platyceps rhodorachis* complex – description of a new species (Reptilia: Squamata: Colubrinae)

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Saharo-Arabian racers of the *Platyceps rhodorachis* complex – description of a new species (Reptilia: Squamata: Colubrinae). - *Platyceps saharicus* sp. n. is described from northern Africa and the Near East (Sinai to western Jordan). This species is morphologically distinct from *P. rhodorachis* (Jan) and a yet unassigned taxon of the *rhodorachis* complex. The latter is sympatric with the Sahara racer in Israel, Jordan, and Palestine.

Keywords: *Platyceps saharicus* sp. n. - *P. rhodorachis* - *Platyceps* sp. *incertae sedis* - distribution - systematics.

INTRODUCTION

Platyceps rhodorachis (Jan, 1863) was described from Shiraz, Iran. The taxon, as understood today, is a wide-ranging species complex comprising populations from the Hoggar (Ahaggar) and Tassili in southeast Algeria and from Somalia to the “Western Himalayas” (Boulenger, 1893). Populations from the Horn of Africa, originally described as *Zamenis ladacensis subnigra* Boettger, 1893, are commonly considered a subspecies of Jan’s cliff racer.

As far as the Near East is concerned, records of *Platyceps rhodorachis* auct. are lacking for most of Iraq, northern Saudi Arabia (with the exception of the extreme northwestern corner), and eastern Jordan (e.g., Parker, 1949; Gasperetti, 1988: Fig. 28; Disi *et al.*, 2001). There is reason to assume that this gap reflects the absence of Jan’s cliff racer from the interior of the northern Arabian Peninsula rather than lack of collecting activity. Farther west, *P. rhodorachis* auct. is documented from Jordan, Palestine, Israel, Egypt, and on the basis of scattered records from Chad, Libya, and Algeria (e.g., Angel & Lhote, 1938; Kramer & Schnurrenberger, 1963; Mertens, 1969).

It has long been known that *Platyceps rhodorachis* auct. is highly variable in external morphology, and particularly ventral scales (e.g., Anderson, 1895). Anderson (1898), for instance, noted the highest counts in specimens from Egypt, stating that their “lowest number of ventrals [...] is greater than the maximum number from any other localities, with the exception of Midian and the Sinaitic Peninsula”. Soon after, Steindachner (1900) reported considerable variation of ventral and subcaudal scales in

specimens from Lower Egypt and the northern Red Sea (Shadwan Island). Based on the material deposited in the former British Museum (Natural History), Parker (1949: 31) concluded that “there are indications of the possible existence of distinguishable local races [of *rhodorachis* auct.], e.g., in Egypt”.

Werner (1988: 367) distinguished two “*Coluber rhodorachis* *ssp.*” [sic] that “are morphologically distinct [and] well defined geographically, occupying northern vs. southern parts of the Israeli range” (“Perry in MS”). More recently, El-Oran *et al.* (1994) reported significant variation in ventral scales among Jordan populations.

This paper intends to improve our understanding of the *Platyceps rhodorachis* complex, and is a further step towards a revision of this complicated racer group (see Schätti & Ineich, 2004). Within the scope of this contribution, we re-evaluate northern African and Near East populations commonly referred to Jan’s cliff racer and present a preliminary assessment of western Arabian taxa currently identified as *P. rhodorachis* auct.

MATERIAL AND METHODS

This study is based on 74 individuals including 38 specimens of the new species and 22 Iranian *Platyceps rhodorachis* (Appendix). The material is deposited in the following institutions: The Natural History Museum (formerly British Museum [Natural History]), London (BMNH), Field Museum of Natural History, Chicago (FMNH), Museum of Comparative Zoology, Harvard University, Cambridge (MCZ), Muséum d’histoire naturelle, Genève (MHNG), Muséum National d’Histoire Naturelle, Paris (MNHN), Museo Zoologico dell’Università [‘La Specola’], Firenze (MZUF), Naturhistorisches Museum, Basel (NHMB), Naturhistorisches Museum, Wien (NMW), Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt/Main (SMF), Zoological Museum, University of Tel-Aviv (TAU), and Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn (ZFMK). Further acronyms used in the text are CAS (California Academy of Sciences, San Francisco), HUI (Zoological Museum, Hebrew University, Jerusalem), JUM (Jordan University Museum, Department of Biological Sciences, Amman), MCC (Museo Civico di Storia Naturale, Carmagnola), MUM (Mutah University Museum of Natural History, Jordan), MZUT (Museo Zoologico dell’Università, Torino), and ZISP (Zoological Institute, Russian Academy of Sciences, St. Petersburg).

Morphological terms are explained in Schätti (1988). Numbers in parentheses indicate intraspecific variation. The tail / body length ratio was calculated for adult specimens only. Cephalic measurements were ascertained with a calliper. The head length is in a straight line from the anterior tip of the rostral to the posterior border of the median suture of the parietals. The head width equals the distance between the lateral edge of the supraoculars at the middle of the eye. The frontal length is along the midline from the anterior tip to the posterior border, and its width equals the maximum distance between the lateral projections. The internasal, prefrontal, and parietal length was measured along their respective median suture. The distance from the nostril to the eye is the shortest span from the posterior border of the external nose opening to the orbit.

Scale formulae give the number of longitudinal dorsal scale rows (dsr) at the 15th ventral, midbody, and five ventrals in front of the anal scute. The reduction pattern on the posterior portion of the trunk is expressed in terms of ventrals and as a percentage of their total number (%ven), based on the average of the right and left side counts. Maxillary teeth were examined on the right hand side only. The length of the hemipenis *in situ* (position of the apex) and the insertion of the retractor muscle have been ascertained in terms of subcaudals and are also given in percent of the total number of subcaudals (%sub).

The synonyms do not lay claim to be complete but contain most references presenting new material or good illustrations. Accession numbers are usually cited only at the first mention of a specimen, and where the material was examined by the authors; holdings mentioned by other authors are given in brackets. Coordinates are from the Gazetteers of the U.S. Board on Geographic Names or the GEONET database (<http://earth-info.nima.mil>), the pertinent literature (Gasperetti, 1988: Jabal As-Sinfa, Sawawin [see footnote 1]; Harrison & Bates, 1991: Tureibe Plain), file entries of scientific collections (TAU: Tubas, Vaset), and information by staff members (TAU 7059, 11230).

RESULTS

Platyceps saharicus sp. n. – Sahara racer

Coluber florulentus Geoffroy Saint-Hilaire, 1827 [partim]. - Rüppell, 1845: 308 (“Aegypten”: SMF 18217, see Boettger, 1898).

Zamenis ventrimaculatus [sic] (Gray, 1834). - Günther, 1878: 398 (“Midian”: BMNH 77.6.1.7-8).

?“*Zamenis*” sp. - Hart, 1891: 25 (“Wādy Hessi” [“Jebel Herteh”], see Remarks).

Zamenis rhodorhachis [sic] [partim]. - Boulenger, 1893: [381, 383] 399 (“Egypt”, Beni Hassan, “Tel-el-Amarna”: BMNH 97.10.28.544-545, 1963.993); Anderson, 1898: 252 [270], Tb. [unnumbered], Pl. 35 [BMNH 97.10.28.544] (same material including Tor).

Zamenis rhodorhachis [sic] var. *ladacensis* Anderson, 1871. - Boettger, 1898: 44 (“Tor, Arabien”).

Zamenis rhodorhachis [sic] [partim]. - Steindachner, 1900: 334 (“Insel Shadwan” [Jazirat Shakir]: NMW 25444.9).

Zamenis rhodorhachis [sic]. - Barbour, 1914: 88 (“Wady Feiran”: MCZ 9856).

Coluber rhodorachis. - Flower, 1933: [808] 809 (Wadi “Firan” [Feiran], Wadi Abu “Ghusum”); Scortecci, 1935: 193 (Ain Murr: MZUF 659); Angel & Lhote, 1938: 366 (Djanet [Tassili]: MNHN 1936.105).

Coluber rhodorhachis [sic]. - Schmidt & Marx, 1956: 29 (“Wadi el Sheikh” [ash-Shaykh]: FMNH 72108-10 [72109 now in ZISP]).

Coluber r. rhodorachis [partim]. - Kramer & Schnurrenberger, 1963: 501 (“Ybbi Bou [...] Tibesti”: BMNH 1958.1.3.93).

Coluber r. rhodorhachis [sic]. - Marx, 1968: 31, map 23 (“St. Catherine’s Monastery area [\pm 5000 ft.], Wadi el Sheikh”; “Helwan, Wadi Hof” [Hulwan, Wadi Hawf]: incl. FMNH 153044).

Coluber r. ladacensis [partim]. - Mertens, 1969: 60 (“Hoggar-Berge”: SMF 62785).

Coluber r. rhodorhachis [sic]. - Werner, 1971: 244, Pl. 6A-B (Petra; “southern Cisjordan”: BMNH 1965.805, FMNH 74405, see Type specimens); Werner, 1973: 24, 41 [map] (see Distribution).

Coluber rhodorhachis [sic]. - Branch, 1980: 343, Tb. 2, Pl. 2 [“Saudi Arabia”, BMNH 1978.927, see footnote 1] (karyotype, secondary constriction).

?*Coluber r. rhodorhachis* [sic] [partim]. - Disi *et al.*, 1988: [43] 45 (see Remarks).

- Coluber r. rhodorhachis* [sic] [partim]. - Gasperetti, 1988: [215] 219 [405, 446], Figs 28 [map] and 30, Pls 5 [BMNH 1978.927] and 6 ["Jabal as Sinfa", BMNH 1979.708] (see Remarks and footnote 4) ¹⁾.
- Coluber rhodorachis* ssp. [1]. - Werner, 1988: 367, Tb. 3 (Israel, see Discussion).
- Coluber rhodorachis* [partim]. - Leviton *et al.*, 1992: 92, Pl. 15C ["Jabal as Sinfa, near Wadi Sawawin", BMNH 1978.927] (see footnote 1).
- Coluber r. rhodorachis* [partim]. - El-Oran *et al.*, 1994: 361, 366, Tb. 3 (Aqaba [MUM 366-67], see Remarks).
- ?*Coluber rhodorhachis* [sic]. - Sindaco *et al.*, 1995: 396, Pl. 1.4 (Wadi "Ramm" [MCC R635], see Remarks and footnote 3).
- Coluber r. rhodorhachis* [sic] [partim?]. - Saleh, 1997: [140] 143, map, Pl. 81 (Lower Egypt and Sinai, see Fig. 2).
- ?*Coluber rhodorachis* [partim]. - Disi *et al.*, 2001: 265, map [unnumbered], Figs 188 [Wadi "Ramm"] and 189 [Petra] (see Remarks and footnote 3).
- Platyceps rhodorachis* [complex]. - Schätti & McCarthy, 2001: 81, 88 (discussion).

Type specimens. Holotype - FMNH 72108 (EGYPT: "St. Catherine's Monastery area, Wadi el Sheikh", ♂; coll. Harry Hoogstraal, 14 May 1953). Paratypes - ALGERIA: MNHN 1936.105 (Djanet, 24°34'N 9°29'E, juv. ♀; SMF 62785 ("Hoggar-Berge, Sahara", ♂). CHAD: BMNH 1958.1.3.93 (Yebbi-Bou, 20°58'N 18°04'E, ♀). EGYPT: BMNH 97.10.28.544 (Beni Hassan, 30°54'N 31°40'E, juv. ♂), 97.10.28.545 (Tell El-Amarna, 27°39'N 30°54'E, juv. ♀), 1963.993 ("Egypt", ♀); FMNH 72110 ("St. Catherine's Monastery area, Wadi el Sheikh", ♀), 153044 ("Helwan, Wadi Hof" [Hulwan, Wadi Hawf], ca. 29°52'N 31°19'E, sex unknown [damaged]); MCZ 9856 (Wadi Feiran [Sinai], ca. 28°42'N 33°19'E, ♂); MHNG 2443.32 ("Upper Egypt", ♂); NMW 25444.8 ("Arabische Wüste bei Cairo" [leg. Fischer, 1880], juv. ♀), 25444.9 ("Shadwan" Island [Jazirat Shakir], 27°30'N 33°59'E, ♂), 25444.10 ("Aegypten" ["alte Sammlung"], ♂); SMF 18217 ("Tor, Arabien" [Sinai], 28°14'N 33°36'E, ♂); TAU 8004 (St. Catherine's Monastery area [Sinai], ca. 28°31'N 33°57'E, ♀), 8187 ("Vaset" [Sinai], ca. 29°02' 34°35'E, ♂); ZFMK 50270 ("Nag Hammadi (Nil-Ostufer)", 26°03'N 32°14'E, ♀), 50271 ("Qiseib, Rotes Meer", 29°24'N 32°28'E [Bir Qisayb], sex unknown [subad.]). ISRAEL: MHNG 1358.100 ("Negev", ♀); TAU 1662 (En Yotvata, 29°53'N 35°03'E, ♀), 4430 (Tureibe, ca. 31°05'N 35°06'E, ♀), 11488 (Nahal "Nikrot" [Neqarot], ca. 30°35'N 34°59'E, ♂). JORDAN: BMNH 1965.805 (Petra, 30°19'N 35°29'E, ♀); MHNG 2555.15-18 (Petra, ♂ ♂, juveniles). LIBYA: MZUF 659 (Ain Murr, 22°17'N 24°45'E, sex unknown [subad.]). PALESTINE: FMNH 74405 ("South Dead Sea" [file entry], ♀, formerly HUI-R 3211 ["southern Cisjordan": Werner, 1971]). SAUDI ARABIA: BMNH 77.6.1.7 ("Midian", ♀), 1978.927 and 1979.708 (Sawawin, 27°57'N 35°47'E, ♂ ♂, see footnote 1). SUDAN: ZFMK 23156 ("Nubien", juv.).

Further material. EGYPT: SMF 32307 ("Kairo" [leg. "v. Hoff"], juv.). ISRAEL: MHNG 2555.20 (Mizpe Ramon, 30°36'N 34°48'E, juv.). SAUDI ARABIA: BMNH 77.6.1.8 ("Midian", ♀; body fragmentary), 1979.709 (Jabal as-Sinfa, ♀; head and tail damaged, see footnote 1).

Derivatio nominis. The species is named after the Sahara desert, its main distribution range.

Description of holotype (FMNH 72108, ♂). Rostral distinctly broader than high. Internals and prefrontals about the same length along the median suture. Frontal 1.45 times longer than broad, ca. 1.5 times longer than internasals and prefrontals, as long as parietals. Posterior border of parietals straight but somewhat indented towards the median suture. Head 2.25 times longer than maximum distance between outer border of supraoculars. Distance from the nostril to the eye nearly equals the length of the internasals and prefrontals. Loreal oblong and longer than high,

¹⁾ BMNH 1978.927 (leg. J. Gasperetti) and 1979.708 (coll. J. Forster, pres. J. Gasperetti) are registered as from "Sawawin", and BMNH 1979.709 from "Jabal As-Sinfa, ca. 500 m" (coll. J. Forster, pres. J. Gasperetti). They were all collected in the same area at approx. 27°57'N 35°47'E.

situated on 2nd (anterior portion) and 3rd supralabial. Preocular single, contacting frontal. A single anterior subocular on the right side, left with a somewhat smaller pre-subocular on the 3rd and 4th supralabial. Nine supralabials, 5th and 6th in contact with eye, 7th largest. Two postoculars and anterior and posterior temporals. Ten sublabials, first four in contact with the anterior inframaxillary, 6th largest. Anterior chin shields slightly broader and shorter than posterior pair which is separated by two small scales anteriorly and 4-5 rows of scales posteriorly. Gulars in 4 oblique rows.

Ventrals 250 (penultimate is a half-scale); anal scute divided; 144 paired subcaudals. Dorsals with 2 apical pits, in 19-19-11 rows at the 15th ventral, midbody, and in front of the vent. First reduction involving row 7+8 (right) and 6+7 (left) at ventrals 135 and 134 (54%ven), respectively, 2nd (rows 3+4) at 142 (57%ven), 3rd (6+7) at 157-158 (63%ven); reduction to 11 dsr involving row 3+4 at ventral 212 (right, 85%ven) and 4+5 between ventrals 198-209 (left, 84%ven: irregular, including paravertebral fluctuations). Length ca. 1270 (ca. 905 + 365) mm.

Light greyish above. Dark pigmentation at the posterior edge of the loreal, a distinct streak from the lower posterior edge of the eye to the 7th supralabial, a large dark spot on the anterior temporals; parietals obscurely marbled. Neck and anterior part of trunk transversely banded; light interspaces narrower than crossbars; their lateral portion sometimes separated and alternating with median series of bands. Lateral edges of ventrals darkened (spotted anteriorly).

Maxillary with 13 subisodont teeth followed by two enlarged postdiastemal teeth. Hemipenis spinose throughout.

Variation. Rostral 1.58-1.85 times broader than high. Internasals about the same length as, or slightly shorter than, prefrontals. Frontal 1.24-1.48 times longer than broad, 1.20-1.51 times longer than internasals and prefrontals, 0.78-1.0 times as long as parietals. Posterior border of parietals straight, forming an obtuse angle, or somewhat indented at the median suture. Head 2.15-2.46 times longer than broad.

Distance from the nostril to the eye equals 0.83-0.96 times the length of the internasals and prefrontals. Loreal usually longer than, or as long as, high, situated on the 2nd (posterior portion) and 3rd supralabial. Preocular single, with a nick on the anterior border in BMNH 77.6.1.7, 1965.805, and 1978.927; in contact with frontal. Usually a single anterior subocular; absent in BMNH 97.10.28.545 (Anderson, 1898); FMNH 74405 (left), MCZ 9856 (right), SMF 62785 (both sides), and TAU 8004 (left) with a presubocular. Nine supralabials (8 on right side of ZFMK 23156, 10 in BMNH 1963.993 [8th vertically divided] and on right side of NMW 25444.8), 5th and 6th (4th to 6th in BMNH 97.10.28.545) in contact with eye. Normally 2 postoculars (3 in ZFMK 23156); upper coalesced with supraocular in ZFMK 50271, lower fused with 6th supralabial in NMW 25444.8. Two anterior and 2 or 3 generally smaller posterior temporals; lower scale in first row usually distinctly larger than upper (especially so in SMF 62785 and ZFMK 23156). Upper anterior temporal vertically divided in FMNH 153044, MHNG 2555.15, and MNHN 1936.105 (left). With an additional small scale between the lower anterior temporal, the lower postocular, and the supralabials in BMNH 1963.993 (left), FMNH 74405 (right) and MZUF 659. BMNH 1963.993 has the parietals laterally distinctly constricted at the anterior level of the 2nd row of tem-

porals. An enlarged elongate scale along the lateral border of the parietals in TAU 4430, and at the posterior edge in TAU 8187.

Usually 10 (11 on right side of TAU 8187) sublabials, the four (and anterior part of 5th in BMNH 97.10.28.544, 1963.993, MCZ 9856, TAU 11488, and ZFMK 23156) anterior in contact with first inframaxillary, 6th (7th) largest. Anterior chin shields broader and shorter than posterior pair; the latter anteriorly separated by 1-2 (rarely 3) rows of scales (sometimes very small) and usually 3-5 posteriorly. Gulars in 4 (5) oblique rows between the posterior chin shields and the first ventral.

Ventrals 238-264 (♂♂ 238-258, ♀♀ 239-264); anal scute divided; 134-149 (♂♂ 136-144, ♀♀ 134-149) paired subcaudals; sum of ventrals and subcaudals 374-405 (375-402, 374-405, respectively)². Populations from northern Africa, Sinai, Jazirat Shakir, and NW Saudi Arabia have more ventral scales and a higher sum of ventrals and subcaudals than those from Israel, Jordan, and Palestine.

According to Boulenger (1893), the Beni Hassan specimen (BMNH 97.10.28.544: 628 + 244 mm) is a halfgrown with 262 ventrals (256 and damaged portion). This count is also found in Anderson (1898) who reported the individual to be a female.

Dorsals with paired apical pits, in 19-19-13, 19-19-11, or 19-19-11/13 rows. First reduction at ventrals 126 (Jazirat Shakir, 50%ven) and 133-151 (52-61%ven), 2nd 138-158 (56-62%ven), 3rd 160-200 (62-78%ven); occasional 4th reduction to 11 dsr 186-237 (76-96%ven). First and 2nd fusion involving rows 2-4 or 6-9 (10), 3rd 5-8, and 4th (optional) rows 2-4 or 5-7.

Longest specimens over 1410 (1010 + 400) mm in males (TAU 8187) and approx. 1380 (ca. 1000 + 380) mm in females (ZFMK 50270); snout-vent length of BMNH 1963.993 (♀) ca. 1100 mm (tail truncated). Specimens with a total length exceeding one meter are also reported, for instance, by Flower (1933). Tail/body ratio in adults 0.38-0.41 (♂♂, ♀♀).

Greyish, light brown, or olive brown above. Pileus with obscure markings (Fig. 1) and temporal region often darkened. Neck with alternating or coalesced dark transverse bars; light interspaces often mottled with fine black dots. Dorsum with a series of ventrolateral bars, transversely banded throughout, or barred and chequered. Crossbars normally distinctly narrower than, or as wide as, light interspaces; much wider in, for instance, BMNH 1965.805 (Werner, 1971: Pl. 6A). In adults, the dorsal colour pattern is usually faded on the last quarter of the body and tail. Lateral edges of ventrals darkened or with blackish spots, sometimes with an obscure pattern along their borders. "Color variations include bright salmon red individuals" according to Saleh (1997).

Maxillary usually with 15-17 teeth (18 in FMNH 74405), last two separated by a diastema from the subisodont anterior series. Hemipenis subcylindrical, apex (*in situ*)

² Parker (1949; footnote 2) remarked "that the very high subcaudal count of 154 for a specimen from Egypt [BMNH 97.10.28.545], first reported by Anderson (1898, p. 253) and repeated by others, is a typographical error for 145." This lapsus for the Tell El-Amarna specimen was published for the first time in the species section of Boulenger (1893: 399) but the correct count (145) is given in the generic table (p. 381). Further printing errors in the pertinent literature include, for instance, the ventral count of BMNH 1958.1.3.93 (245 instead of 254) in Kramer & Schnurrenberger (1963).

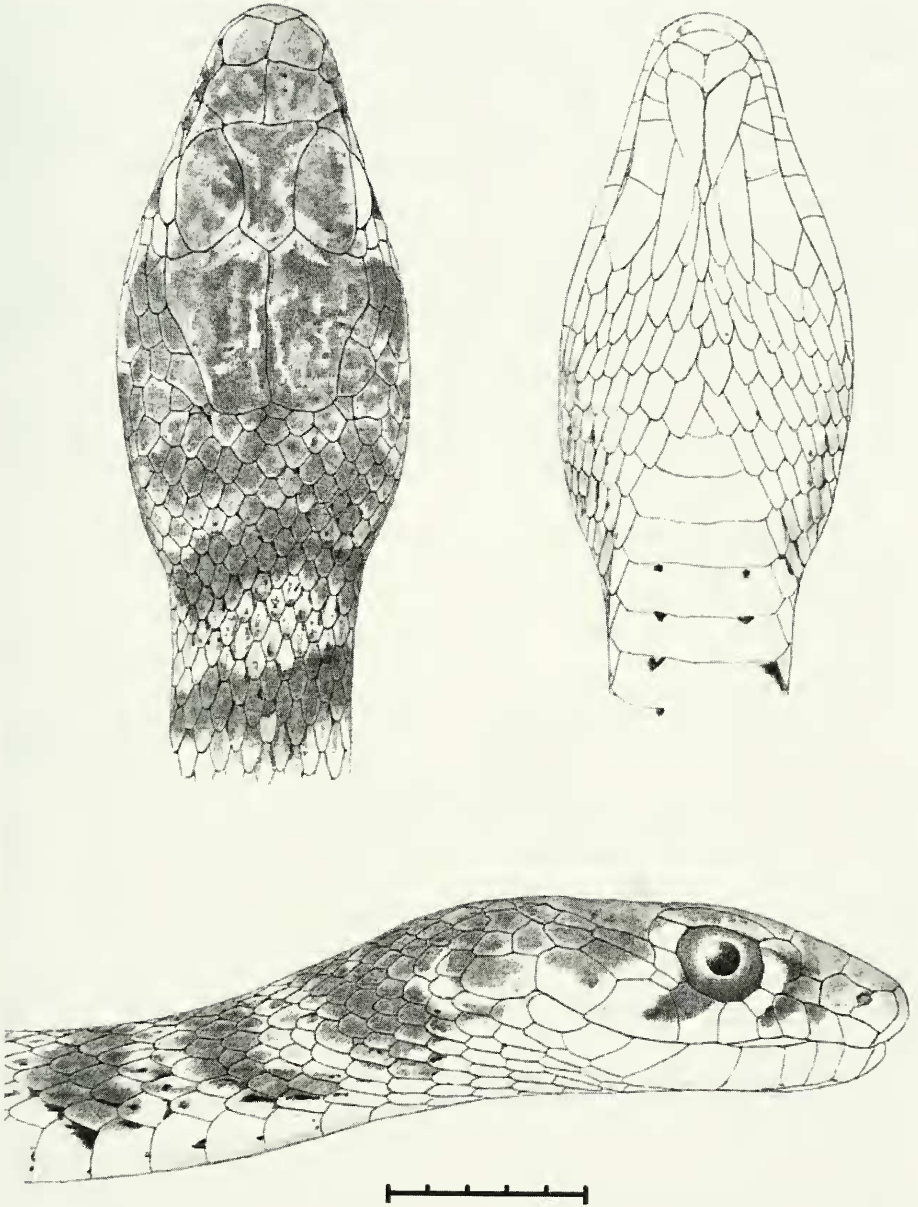


FIG. 1

Platyceps saharicus (BMNH 1958.1.3.93): dorsal, ventral, and lateral view of head and neck. Scale line 10 mm. Drawings by Edward Wade.

at 7th subcaudal (5%sub), distinct spines to 4th subcaudal (3%sub); *Musculus retractor penis magnus* inserting at 26th subcaudal (18%sub) (NMW 25449.9).

Distribution and Ecology. The Sahara racer is distributed from SE Algeria to Nubia (Sudan), SW Jordan, and NW Saudi Arabia (see Discussion). In the western part of the range, *Platyceps saharicus* appears to be locally restricted as evidenced by the scattered records from Egypt to Algeria (Fig. 2). The northernmost record is FMNH 74405 from the West Bank, Palestine ("southern Cisjordan", Werner, 1971).

The species is documented from the Ahaggar ("Hoggar", SMF 62785), Tassili, and Tibesti mountains in SE Algeria and Chad, SE Libya (Ain Murr), the Nubian region in Sudan, and Egypt (see Synonymy). In the latter country, the Sahara racer was "obtained on the margin of the desert" at Beni Hassan, east of the Nile delta, and Tell El-Amarna (Anderson, 1898) in Upper Egypt, near Nag Hammadi (ZFMK 50270), in

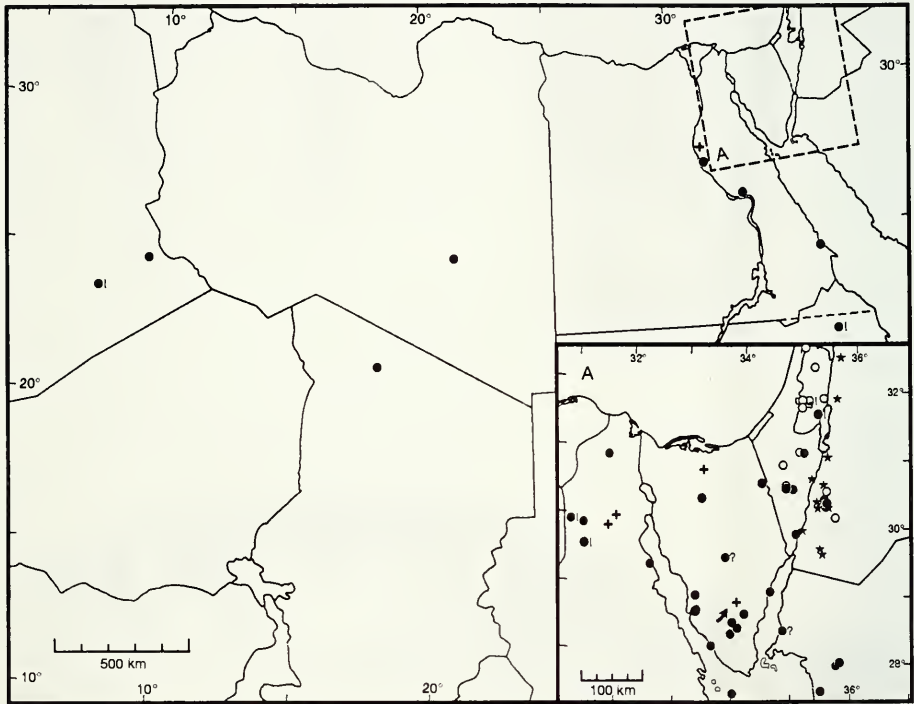


FIG. 2

Distribution of *Platyceps saharicus* (●) and *Platyceps* sp. (○) in northern Africa and northwestern Arabia based on the examined material except BMNH 64.8.23.108 ("Dead Sea") and NMW 25444.3-7 (see Discussion), and on literature records including six unspecified localities from Sinai mapped in Werner (1973) tentatively referred to *P. saharicus* (see text). The approximate type locality of *P. saharicus* is indicated by an arrow (↗). Crosses (+) mark five localities of *P. rhodorachis* auct. from Lower Egypt and Sinai mapped in Saleh (1997). Question marks denote Hart's (1891) specimen from the Tih Plateau ("Jebel Herte", approximate position) and "JG 70658" (Gasperetti, 1988) from Jabal Tayran (28°25'N 34°50'E) provisionally assigned to *P. saharicus* (see Discussion and footnote 4). An exclamation mark indicates approximate locations, and stars (★) denote Jordan records and observations of unknown identity mentioned by Disi *et al.* (1988), Amr *et al.* (1994), and El-Oran *et al.* (1994).

the Cairo area, as well as along the Red Sea coast, i.e., in Wadi Abu Ghusun (24°27'N 35°12'E; Flower, 1933), "Qiseib" (ZFMK 50271), and on Jazirat Shakir (NMW 25444.9).

Werner (1973) mapped eight localities in Sinai including TAU 8004 (St. Catherine's Monastery area) and 8187 ("Vaset"). These records of "*Coluber r. rhodorachis*" are herewith tentatively assigned to the Sahara racer (see Discussion and Fig. 2).

Werner (1988: 372) might be wrong that "the record of *Coluber ventromaculatus* from Sinai, quoted by Gasperetti (1974) could conceivably have been based on a *C. rhodorachis* with ventrolateral black dots [...]." The citation refers to Hart's (1891) "*Zamenis ventrimaculatus*" [sic] from Wadi Zalaqah determined by Günther (1891). This specimen is probably *Platyceps rogersi* (Anderson, 1893) (Schätti, in prep.).

Flower (1933) collected a specimen "upstream perennial water in Wadi Firan [Feiran], south Sinai at or over 2000 ft." (> 650 m). According to Marx (1968), the type locality in Wadi ash-Shaykh near St. Catherine's Monastery is at ca. 1'500 m above sea level. The holotype and a paratype (FMNH 72110) were collected "among rocks on hillside", and the former had an "*Eumeces* lizard in stomach" (file entry).

Platyceps saharicus is sympatric with the species discussed below in the Negev, Palestine (West Bank), and southwestern Jordan (Fig. 2). In the latter country, *P. rhodorachis* auct. "has been reported only from the dry parts [...] in an altitudinal range of -410 [sic] to 1160 m" (Disi *et al.*, 2001). It cannot be excluded that both taxa occur in NW Saudi Arabia (see Discussion).

Remarks. Various Near East literature records cannot be assigned with certainty to either species dealt with in this paper due to the lack of individual diagnostic data, i.e., ventral and subcaudal counts or any morphological features at all ³⁾. This is, for instance, the case with "a sand-coloured snake about 4 feet long" from the "Jebel Herteh" area in Sinai (Tih Plateau) reported by Hart (1891) and Gasperetti's (1988: Fig. 28, no. 39) record ("CAS JG 70658") from Jabal Tayran (28°25'N 34°50'E) in extreme NW Saudi Arabia (see Discussion and Fig. 2).

Based on material in the JUM collection (not examined), Disi *et al.* (1988) recorded *Platyceps rhodorachis* auct. from "Khanzerah" (Khinzirah, 32°28'N 35°42'E), Wadi Fidan (ca. 30°40'N 35°22'E), "Ghore Al-Wast" (unlocated), "Ghore Nimreen" (Ghor Nimrin, 31°54'N 35°37'E), and "Rahmeh" (Rahmah, 29°55'N 35°08'E). Ventral and subcaudal data are 230-238 and 113-154 (120-154 in their determination key), respectively. We strongly suppose that the maximum value for subcaudals is from literature (see footnote 2). The ventral counts (probably including 'pre-ventrals') suggest that these specimens, or at least the majority, are *Platyceps* sp. *incertae sedis*.

Apart from two individuals belonging to the species discussed below, El-Oran *et al.* (1994) reported MUM 14 collected at "El-Naqah (Wadi Araba)" (31°02'N 35°29'E) which is not listed in their table. MUM 83 from "El-Disah (Wadi Rum)" (Ad-Disah, 29°37'N 35°33'E, maybe the one "killed during late afternoon near a pool", Amr *et al.*, 1994) is without ventral and subcaudal counts (total length 1370 mm,

³⁾ At the moment of this writing, we are not aware of clear-cut differences in coloration between *Platyceps saharicus* and *Platyceps* sp. This issue requires further investigation.

tail/body ratio 0.38). The identity of this material as well as observations “near Petra and El-Disah” (“seen during daytime”) remains open to question. This also applies to MCC R635 from Wadi “Ramm” (Rum, ca. 29°41'N 35°27'E) figured in Sindaco *et al.* (1995) and records quoted in Disi *et al.* (2001) including Wadi Musa (30°22'N 35°25'E) and “the lower Jordan Valley” which are probably based on Amr *et al.* (1994: JUM 372, see the following taxon) and El-Oran *et al.* (1994).

Platyceps sp. *incertae sedis*

Zamenis ventrimaculatus [sic] (Gray, 1834). - Günther, 1865: 489 (“Dead Sea”: BMNH 64.8.23.108); Tristram, 1884: 143 (“Found round the Dead Sea”, same specimen).

Zamenis rhodorhachis [sic] [partim]. - Steindachner, 1900: 334 (“Umgebung von Cairo”: NMW 25444.3-7, see Discussion).

Coluber rhodorachis ssp. [2]. - Werner, 1988: 367, Tb. 3 (Israel, see Discussion).

Coluber r. rhodorhachis [sic] [partim?]. - Disi *et al.*, 1988: [43] 45 (see Remarks under *P. saharicus*); Amr *et al.*, 1994: 45 (see Remarks).

Coluber r. rhodorachis [partim]. - El-Oran *et al.*, 1994: 361, 366, Fig. 1 [map], Tb. 3 (Ash-Shawbak [30°32'N 35°34'E, MUM 72], Ma'an [30°12'N 35°44'E, MUM 371]).

Coluber rhodorachis. - Werner, 1998: 156 (“Bab el Wad [31°49'N 35°02'E], western Judean Hills” [HUJ-R 3652]).

?*Coluber rhodorachis* [partim]. - Disi *et al.*, 2001: 265, map [unnumbered], Figs 188-189 (see *P. saharicus*).

Platyceps rhodorachis [complex]. - Schätti & McCarthy, 2001: 81, 88 (discussion).

Material examined. EGYPT: NMW 25444.3-7 (“Umgebung von Kairo”, ♀, 4 juveniles; 25444.3-6 in poor state). ISRAEL: MHNG 2443.36 (Dimona, 31°04'N 35°02'E, ♂), 2574.90 (Mizpe Ramon, 30°36'N 34°48'E, roadkill); TAU 1324 (Sde Boqer, 30°52'N 34°47'E, ♂), 7059 (“Ya'ar Haqdoshim, Judean Mts.” [pine wood], 31°45'N 35°02'E, ♀), 11230 (“Karmel” [Har Hakarmel (Ridge)], ca. 32°44'N 35°02'E, ♀). PALESTINE: MCZ 119475 (“Judean Desert”, ♂); TAU 9295 (Tubas, 32°19' 35°22'E, ♂), 13674 (Jericho, 31°52'N 35°27'E, ♂). ORIGIN UNCERTAIN: BMNH 64.8.23.108 (“Dead Sea”, ♂).

Morphology. Snout rounded; rostral 1.65 times broader than high (one measurement). Frontal 1.37-1.58 times longer than broad, 1.37-1.46 times longer than internasals and prefrontals, 0.90-0.94 times as long as parietals. Head 2.27-2.45 times longer than maximum distance between outer border of supraoculars. Distance from the nostril to the eye equals 0.86-0.92 times the length of the internasals and prefrontals. Preocular single. Anterior subocular usually single (with a presubocular on right side of TAU 7059). Nine supralabials, 5th and 6th in contact with eye; a posterior subocular on right side of BMNH 64.8.23.108 preventing 6th supralabial from entering orbit. Two anterior and 2 or 3 posterior temporals. Usually 10 (11 in TAU 9295) sublabials, the four anterior in contact with first inframaxillary, 6th largest. Anterior chin shields broader and usually shorter than posterior pair; the latter anteriorly separated by 2 (1) and posteriorly by 3-4 rows of scales. Gulars in 3-4 oblique rows between the posterior chin shields and the first ventral.

Ventrals 220-232 (♂♂ 221-232, ♀ 226-232, juveniles 220-226); anal scute divided; subcaudals 124-133 (♂♂ 124-130, ♀ 131-133); sum of ventrals and subcaudals 351-365 (351-362 and 357-365, respectively). El-Oran *et al.* (1994) noted lower ventral counts in two specimens from Ash-Shawbak (218) and Ma'an (205). We consider the latter figure as a printing error or based on a misidentified individual; the number of subcaudals (103) of the Ma'an specimen (MUM 371) might be due to a

mutilated tail. Steindachner (1900) reported 136 subcaudals for a specimen from “Kairo”, possibly a counting or printing error.

Dorsals in 19-19-13, 19-19-11, or 19-19-11/13 rows; 17 dsr on anterior part of trunk in MHNG 2443.36, increase to 19 at ventral 53 (23%ven). First reduction at ventrals 123.5-137.5 (54-61%ven), 2nd 135-147.5 (59-64%ven) and 161.5 in TAU 9295 (73%ven), 3rd 152-179.5 (67-79%ven) and 192 (87%ven), respectively; occasional 4th reduction to 11 dsr immediately in front of the anal scute (ventrals 218-227) in TAU 1324 and 9295 (98-99%ven). First reduction usually involving rows 7-9 (4th in TAU 7059), 2nd 3-5 (5-8 in TAU 9295, 7+8 in TAU 7059), 3rd 2-3 (TAU 9295) or 5-9, and 4th (optional) rows 2-3 or 6-7.

Remarks. Besides MUM 72 and 83 from “Shawbak” (Ash-Shawbak) and “Disah”, respectively, and two observations at Petra and Wadi “Dhana” (Dana, 30°37’N 35°29’E), Amr *et al.* (1994) reported JUM 372 from Wadi Musa. Most probably, the ventral and subcaudal data (218, 127) are from MUM 72. The identity of the remaining specimens remains unresolved (see El-Oran *et al.*, 1994 and Remarks under *Platyceps saharicus*).

DISCUSSION

Werner (1988: Tb. 3) reported two “*Coluber rhodorachis* ssp.” from the Mediterranean Region of Israel and “Wadi ‘Arava”, respectively, stating that both occur in the “southern deserts”. El-Oran *et al.* (1994) noted that “*Coluber rhodorachis*” auct. “collected from Aqaba have higher ventrals [sic] count (Tb. 3) compared with those collected from Ash-Shawbak and Wadi Araba.” Werner (1998) emphasised the existence of “a similar but distinct species in the Mediterranean region of Israel” as opposed to “*Coluber rhodorachis* (Jan, 1865)” [sic], and that “G. Perry is investigating this question, aiming to find out which of the two, if any, is the true *C. rhodorachis*, and to identify or describe the remaining species.”

Geographically, *Platyceps saharicus* is separated from *P. rhodorachis* Jan, 1863 (*sensu stricto*) by a gap of roughly 1’000 kilometres (Iran, NE Iraq). A comparative sample of Jan’s cliff racer from Iran (22 specimens, see Appendix) reveals significant divergence in ventral scales vis-à-vis *P. saharicus*, i.e., 221-237 (♂♂ 221-237, ♀♀ 224-237) vs. 239-264 in the new species.

In *Platyceps rhodorachis* (s.s.), the subcaudals range from 122-142 (♂♂ 130-142, ♀♀ 122-140), and the sum of ventrals and subcaudals 349-373 (♂♂ 354-373, ♀♀ 349-373) vs. 374-405 in *P. saharicus*. Difference in total scale counts also applies to MCZ 58872 (♂) from Iran (see Appendix) with “broad and close dark crossbands” (Werner, 1971; Haas & Werner, 1969: Pl. 19) and the highest male scale count (235 ventrals, 138 subcaudals) recorded for the *rhodorachis* sample. Apart from ventral scales, *P. saharicus* is distinct from *P. rhodorachis* (s.s.) in lacking the mid-dorsally striped colour morph frequently encountered in the latter species.

The striped dorsal pattern is also absent in *Platyceps* sp. [*incertae sedis*]. This taxon resembles *P. rhodorachis* (s.s.) in its pholidosis but, as in the case of *P. saharicus*, is geographically separated from Jan’s cliff racer.

Platyceps saharicus clearly differs from the sympatric taxon of the *P. rhodorachis* complex in ventral and subcaudal counts (see footnote 3). The distribution of these taxa is far from clear. Particularly, the records of *Platyceps* sp. from the vicinity of Cairo ("Umgebung von Kairo", NMW 25444.3-7) reported by Steindachner (1900) require confirmation. So far, this species has not yet been recorded from Sinai (see Distribution of *P. saharicus* and Fig. 2). Based on verified records of the Sahara racer from Sinai and NW Saudi Arabia, the unlocated specimen from "Jebel Herteh" (Hart, 1891) and "CAS JG 70658" (Gasperetti, 1988) from Jabal Tayran (28°25'N 34°50'E) are tentatively referred to *Platyceps saharicus* (see Fig. 2)⁴). However, a southward extension of the known range of *Platyceps* sp. cannot be ruled out at present.

Platyceps saharicus probably extends along the coastal region of western Arabia, and it cannot be excluded that the 'high ventral' phenotype from Yemen belongs to this species (in prep.). The distribution pattern of *P. saharicus* as outlined here would show a large degree of congruence with, for instance, the lacertid *Mesalina guttulata* (Lichtenstein, 1823) and the agamid *Pseudotrapelus sinaitus* (Heyden, 1827).

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⁴) CAS 70658 is a gekkonid (*Ptyodactylus hasselquistii*), and a single specimen of the CAS herpetological collection (*Cerastes gasperettii*) is registered from Jabal Tayran (Jens V. Vindum *in litt.*)

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APPENDIX. Collection numbers of *Platyceps rhodorachis* (Jan, 1863) from Iran (comparative sample): BMNH 91.9.14.16 ("Western Rhughti Hills", N Shapur), 1905.10.14.46 (Ram Hormuz, NE Ahwaz); CAS 86371, 86409, and 86420 (Masjed Soleyman), 86433 (Naftak [M. Soleyman]), 86586 (Chamkureh: Khuzestan), 86624 (Masjed Soleyman); FMNH 141639 (Pol-e-Abgineh); MCZ 58872 ("Mohar Biringi", unlocated); MZUT 610 ("Persia meridionale"); NMW 15168.1-4 ("Persien"); SMF 51071 (Birjand); ZFMK 31603, 31666-68, and 31670 (vic. Shiraz); ZISP 13557 ("Central Persia").